

**Notice of Allowability**

Application No.

09/940,367

Examiner

Lewis A. Bullock, Jr.

Applicant(s)

RICCIARDI, ALETA

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/21/04.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☒ The drawings filed on 28 August 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

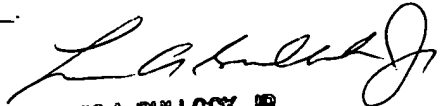
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
LEWIS A. BULLOCK, JR.  
PRIMARY EXAMINER

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Stuart Rudoler on April 14, 2005.

The application has been amended as follows:

- Cancel claims 13-62.
- Claim 1 is amended as follows:

1 (currently amended). A computer-implemented method of handling a transition in a group of services in a distributed computing application comprising the steps of:

determining the need for the transition;

determining a correct group logic shell and service proxies for the transition group; and

dynamically updating a group proxy, said group proxy being associated with a client that calls the group, so that the group proxy contains the correct determined group logic shell and service proxies.

- Claim 7 is amended as follows:

7 (currently amended). A computer readable medium containing instructions for controlling a computer system to perform a method of handling a transition in a group of services in a distributed computing application comprising the steps of:

determining the need for the transition;

determining a correct group logic shell and service proxies for the transition group; and

dynamically updating a group proxy, said group proxy being associated with a client that calls the group, so that the group proxy contains the correct determined group logic shell and service proxies.

- Page 12, line 19, “\_\_\_\_\_” is replaced with “09/928,026, still pending”
- The abstract is amended as listed on the last page of the action.

2. The following is an examiner’s statement of reasons for allowance: The claims are allowable for at least the following reasons: Applicant claims dynamically updating a group proxy so that the group proxy contains the correct determined group logic shell and service proxies for the determined transition in a group of services. As disclosed in the specification and argued by Applicant in the response filed September 21, 2004, a group logic shell contains the logic that implements the group abstract data type: group communication, member failure detection, handling and masking, consensus

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algorithms, leader election algorithms, and so forth. In short, the group logic shell contains much of the results from algorithmic research in distributed computing (response, pg. 10, 2<sup>nd</sup> paragraph; specification, page 16, line 10 – page 17, line 23). The group logic shell makes it possible to create and reconfigure group proxies on the fly as the application is running (response, pg. 11, 2<sup>nd</sup> paragraph). A service proxy is a module of mobile code that can be used by clients to invoke and interact with a service (response, pg. 11, 4<sup>th</sup> paragraph; page 1, line 23). Therefore, Applicants invention allows for the dynamic transition of a group proxy to a correct group logic shell and service proxies as defined above, hence the shell is dynamically capable of performing the transition. None of the prior art of record teaches the defined group proxy containing the defined group logic shell or the defined service proxies wherein the group proxy is capable of dynamically updating itself as disclosed in the specification and argued by Applicant. At best, the cited prior art of record teach a grouping of services or grouping of mobile agent codes such that the group is capable of being modified by a programmer. The cited prior art does not allude to the dynamic modification of the group as defined above. Therefore, the claims are allowable over the cited prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

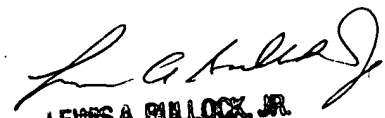
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571) 272-3759. The examiner can normally be reached on Monday-Friday, 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 15, 2005

  
LEWIS A. BULLOCK, JR.  
PRIMARY EXAMINER

## ABSTRACT

The invention is a method of handling groups of services where the makeup of the groups can be determined and changed while the application is running. This is mainly accomplished through a group proxy, which is generated at run time, and which handles interactions with groups of services on behalf of one or more clients. The group proxy consists of a group logic shell which contains all the group-aware logic, and a service proxy for each service in the group which contains the necessary logic to interact with the particular service. The group proxy, which is given to a client for all of its interactions with the group of services, buffers calls from that client to its group when the group is unavailable because it is in transition. When the transition is complete the group proxy transmits the stored client commands to the group.